

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A magnetic bearing apparatus comprising: a rotatable rotary member in which a radial magnetic bearing rotor and an axial magnetic bearing disc are secured to a rotary shaft; electromagnets that are arranged around said rotary member via a small gap; and a case housing them, wherein

said apparatus further comprises: cooling wind producing means for producing cooling wind of a low temperature [with] using a driving force of said rotary member; and a cooling wind flow path through which the low-temperature cooling wind produced by said cooling wind producing means is to flow into said magnetic bearing apparatus.

2. (currently amended): A magnetic bearing apparatus according to claim 1, wherein said cooling wind producing means comprises: high-speed air flow producing means for producing a high-speed air flow [with] using the driving force of said rotary member; converting means for converting the high-speed air flow produced by said high-speed air flow producing means, to a vortex flow; an air flow path through which the high-speed vortex flow converted by said converting means is to flow; and a control valve which is disposed on a side of said air flow path opposite to said converting means.

3. (currently amended): A magnetic bearing apparatus comprising: a rotatable rotary shaft to which a radial magnetic bearing rotor and an axial magnetic bearing disc are

secured; electromagnets which are arranged with ~~forming~~ a small gap with respect to said radial magnetic bearing rotor and said axial magnetic bearing disc; and a case housing them, wherein

said apparatus further comprises: cooling wind producing means that produces cooling wind of a low temperature, and that has: fins which are disposed on said rotary shaft, and which produce[s] an axial air flow by a driving force of said rotary shaft; a generator which is fixed with ~~forming~~ a predetermined gap with respect to said fins, and which produces a high-speed vortex flow; a tube through which the high-speed vortex flow produced by said generator is to flow; and a control valve which is disposed on a side of said tube opposite to said generator; and a cooling wind flow path through which the low-temperature cooling wind produced by said cooling wind producing means is to flow into said magnetic bearing apparatus.

4. (original): A magnetic bearing apparatus according to claim 3, wherein said cooling wind flow path is disposed in said rotary shaft portion so as to axially elongate.

5. (original): A magnetic bearing apparatus according to claim 3 or claim 4, wherein said cooling wind flow path has: a cooling wind flow path disposed in said case; and a pipe which guides the low-temperature cooling wind to said cooling wind flow path disposed in said case.

Claims 6 – 9 (canceled).